

REMARKS

Claims 5 and 22-27 are pending in the present application. With entry of this Amendment, Applicant adds new claims 29-33. Reexamination and reconsideration are respectfully requested.

The Examiner rejected claims 23, 25 and 27 under 35 U.S.C. § 102(b) as being anticipated by Adachi et al. (US 5,721,390). The rejection is respectfully traversed.

The present invention as set forth in claim 23 is directed to a sound signal analyzing device. The device extracts the pitch of a sound signal. The extracted pitch is used to designate an upper and/or lower pitch limit. The device then sets various parameters (e.g., a band pass filter range) based on the designated pitch limit for use in subsequent signal analysis. The present invention is more robust than conventional analysis devices using pre-set parameters, because the parameters of the present invention are set according to the characteristics of the input signal. The device further includes a display where a user can vary the pitch limit by manipulating an image of the pitch limit.

Adachi is not directed to extracting a pitch of a sound signal in any manner whatsoever. It merely discloses obtaining a portion of a sound signal for storage and changing its length for reproduction. More specifically, Adachi discloses a musical tone generating apparatus that converts an external analog sound signal to a digital signal. A portion of the digital signal is then read out as waveform data. A user can "trim" front and rear portions of the waveform data (see Col. 8, lines 29-61). Trimming the length of waveform data for use in reproduction is completely unrelated to analyzing content. Adachi does not do analysis to determine what the pitch of the sampled sound signal is. All that Adachi discloses in Col. 8, lines 29-61 is changing the length of sampled waveform data.

Nor does Adachi disclose using the extracted pitch for setting various parameters for

subsequent analysis of sound signals. Adachi discloses that the trimmed waveform data can be mapped to a tone area (e.g., E-2 to G#-1) selected by the user (see Col. 8, line 62 to Col. 9, line 22), which merely defines what keys will reproduce the trimmed waveform data. It does not set parameters for how subsequent external signals received by the apparatus will be analyzed. Accordingly, claim 23 and claims 25 and 27 (which have recitations similar to claim 23) are not anticipated by Adachi.

The Examiner also rejected claims 23, 25 and 27 under 35 U.S.C. § 102(b) as being anticipated by Zimmerman (US 5,287,789). The rejection is respectfully traversed.

Zimmerman is directed to a music training apparatus for training a student. The apparatus tracks and displays the pitch 466 of a student's musical performance as shown in Fig. 12. The apparatus further allows a pitch boundary 465 having a certain width 470 to be set. The student then tries to maintain his pitch within the boundary 465 to obtain a high score 467.

The Examiner contends that width 470 reads on "a designating section that, based on the pitch of the sound signal, designates at least one of an upper and lower pitch limit as a pitch limit characteristic" of claim 23. Zimmerman, however, fails to disclose that width 470 is "based on the pitch of the sound signal." There is no disclosure that the student's pitch 466 is used to set width 470. Indeed, it appears that width 470 is set independently from the student's pitch. Col. 20, lines 18-23 notes that the difficulty of the maze is determined in part by the boundary width 470 and that the exercise helps "increase" the pitch control of the student. This suggests that a student can adjust width 470 to change the difficulty of the exercise as desired.

The Examiner has previously cited Col. 10, lines 12-26 as suggesting that the maze is set with the student's performance (as opposed to before the student's performance). See Office Action dated February 3, 2004 at page 2. Col. 10, lines 12-26 refers to an embodiment in which the student's performance is compared against a reference performance. There is nothing in Col. 10, lines 12-26 to suggest that the reference performance of this embodiment is used to establish width 470. Even if one accepts that width 470 is somehow established by the reference performance, this

conclusion in fact supports Applicant's understanding of Zimmerman. Because the reference performance is independent of the student's performance, width 470 – allegedly based on the reference performance – will accordingly be set independently of the student's pitch.

The Examiner had also provided a discussion of intended use in the February 3 Office Action. It appears that the Examiner is indicating that an intended use of a claimed invention does not overcome a prior art reference that is structurally identical to the claimed invention and capable of performing that use. Applicant, however, has never argued an intended use for claim 23. Applicant has simply noted that the invention of claim 23 extracts the pitch and designates at least one of an upper and lower pitch limit based on the extracted pitch. Zimmerman's width variance suggests that width 470 is set independently of the student's pitch. Thus, there is a structural difference between Zimmerman and the present invention, because Zimmerman does not designate a pitch limit based on the student's pitch.

Even if one accepts that Zimmerman somehow discloses extracting a pitch and designating a pitch limit based on the extracted pitch (which it does not), it fails to disclose setting "various parameters for use in subsequent analysis of sound signals received by said input section in accordance with the pitch limit characteristic, including at least a filter characteristic." The Examiner cites Col. 20, lines 7-8 and boundary 465, but the cited section only discloses that the student must confine his pitch within boundary 465 to navigate the maze. There is nothing to suggest that parameters for subsequent signal analysis are set based on boundary 465. For example, claim 23 recites that one parameter is a filter characteristic. Boundary 465 is not a filter, because nothing happens to the signal if boundary 465 is crossed. According to Zimmerman, all that is affected is the student's score (see Col. 20, lines 13-17).

Finally, Zimmerman fails to disclose that the user "can vary the pitch limit characteristic by manipulating" an image of at least one of the upper and lower pitch limits. There is nothing in the discussion relating to Fig. 12 that indicates that the user can manipulate the displayed image to vary boundary 465 or width 470. The Examiner instead cites Col. 14, lines 67-68. This section

relates to an embodiment in which the student can compare his performance to a reference source. The reference source is a note list (such as MIDI) as opposed to audio tape or a teacher performing. Because the note list does not produce a tone, Zimmerman discloses that the microcontroller unit of the apparatus can be used as a tone source by configuring its internal timer to generate a periodic rectangular wave. Col. 14, lines 67-68 explains that “the duty cycle of the rectangular wave may be varied to alter the perceived volume and timbre.” This statement refers only to volume and timbre. It is unrelated to pitch limit or, for that matter, pitch. Moreover, there is nothing to indicate that an image being displayed is being manipulated. While the rectangular wave is adjusted based on a “perceived” volume or timbre, Zimmerman does not disclose that the *adjustment* is done through manipulating an image.

Accordingly, claims 23, 25 and 27 are not anticipated by Zimmerman.

The Examiner rejected claims 5, 22, 24 and 25 as being anticipated under § 102(b) as being anticipated by Silfvast et al. (US 5,524,060). The rejection is respectfully traversed.

The present invention as set forth in claim 22 is directed to a sound signal analyzing device. The device comprises an input section that receives sound signals to be analyzed and a characteristic extraction section. The section extracts a volume level of a sound signal as it is received. The device further comprises a setting section “that sets various parameters for use in subsequent analysis of sound signals received by said input section in accordance with the volume level of the sound signal extracted by said characteristic extraction section, including at least a threshold value.” Thus, the setting section sets various parameters, including a threshold value, for subsequent signal analysis based on the extracted volume level.

Silfvast fails to disclose setting various parameters, including a threshold value, for subsequent signal analysis based on the extracted volume level. Silfvast is directed to a system that comprises a variable gain amplifier that receives an input audio signal. The system detects the level of the input audio signal and then applies a gain based on the detected level (see, e.g., Col. 2, lines 25-65, Col. 12, line 54 to Col. 13, line 24; Fig. 8). The amount of gain is determined through a

programmable table stored in RAM. The sections cited by the Examiner allegedly read on the setting section recited in claim 22 do not disclose that the detected level of the input signal is used to set parameters for any subsequent signal analysis; it merely controls the amount of gain to be applied to the signal. The system detects the level of the input signal and applies the gain based on the detected level and according to the programmable table. It is an amplification circuit, not an analysis circuit. Thus, no parameters are set based upon the input signal to control subsequent analysis of the signal. Accordingly, claim 22, its dependent claim 5 and claims 24 and 26 (which have recitations similar to claim 22) are not anticipated by Silfvast.

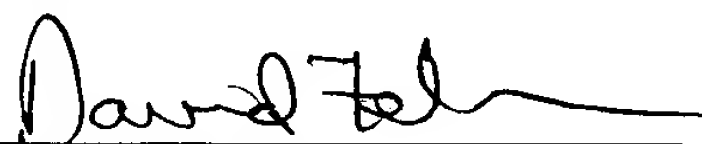
Applicants have added new claims 29-33. All of these claims are directed to analyzing a sound signal and providing musical notation of the analyzed signal. None of the three references cited above provides musical notation.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If the Examiner feels that it would advance the prosecution of the application, it is respectfully requested that the Examiner telephone the undersigned attorney.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 393032009400. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: January 18, 2005

Respectfully submitted,

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